### DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

### LAKE TROPHIC DATA

# MORPHOMETRIC:

Lake: CASS POND	Lake Area (ha):	19.59
Town: RICHMOND	Maximum depth (m):	7.9
County: Cheshire	Mean depth (m):	2.4
River Basin: Connecticut	Volume (m³):	516500
Latitude: 42°44'43" N	Relative depth:	1.5
Longitude: 72°15'45" W	Shore configuration:	1.75
Elevation (ft): 1052	Areal water load (m/yr)	: 2.32
Shore length (m): 2900	Flushing rate (yr <sup>-1</sup> ):	1.00
Watershed area (ha): 98.1	P retention coeff.:	0.79
<pre>% watershed ponded: 0.0</pre>	Lake type:	natural

BIOLOGICAL:	13 February 2003	30 July 2002
DOM. PHYTOPLANKTON (% TOTAL) #1	PERIDINIUM 80%	RHIZOSOLENIA 60%
#2	DINOBRYON 15%	CHRYSOSPHAERELLA 9%
#3		COELOSPHAERIUM 6%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		8.23
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 22%	KERATELLA 32%
#2	CILIATE SPP. 20%	ROTIFER SPP. 11%
#3	ASPLANCHNA 18%	SYNCHAETA 9%
ROTIFERS/LITER	137	307
MICROCRUSTACEA/LITER	36	65
ZOOPLANKTON ABUNDANCE (#/L)	222	401
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		2.9
BOTTOM DISSOLVED OXYGEN (mg/L)	10.1	0.3
BACTERIA (E. coli, #/100 ml) #3		4
#2		< 1
#:	3	

# SUMMER THERMAL STRATIFICATION:

## weakly stratified

Depth of thermocline (m): None Hypolimnion volume (m³): None Anoxic volume (m³): 6700

CHEMICAL:			CASS PONI	)		
	13 Febru	uary 2003	30 3	July 2002		
DEPTH (m)	1.5	3.0	2.0		4.0	
pH (units)	5.7	5.7	6.2	W	6.1	
A.N.C. (Alkalinity)	1.9	1.8	1.7		1.8	
NITRATE NITROGEN	0.05	0.05	< 0.05		< 0.05	
TOTAL KJELDAHL NITROGEN	0.30	0.40	0.40		0.30	
TOTAL PHOSPHORUS	0.005	0.006	0.007		0.009	
CONDUCTIVITY (µmhos/cm)	36.1	35.9	40.6			
APPARENT COLOR (cpu)	8	8	20		20	
MAGNESIUM			0.39	* · · · · · · · · · · · · · · · · · · ·		
CALCIUM			1.5	*****		
SODIUM			3.2			
POTASSIUM			< 0.40	··········		
CHLORIDE	5	5	4		4	
SULFATE	4	4	3		3	
TN : TP	70	75	57		33	
CALCITE SATURATION INDEX			4.7			

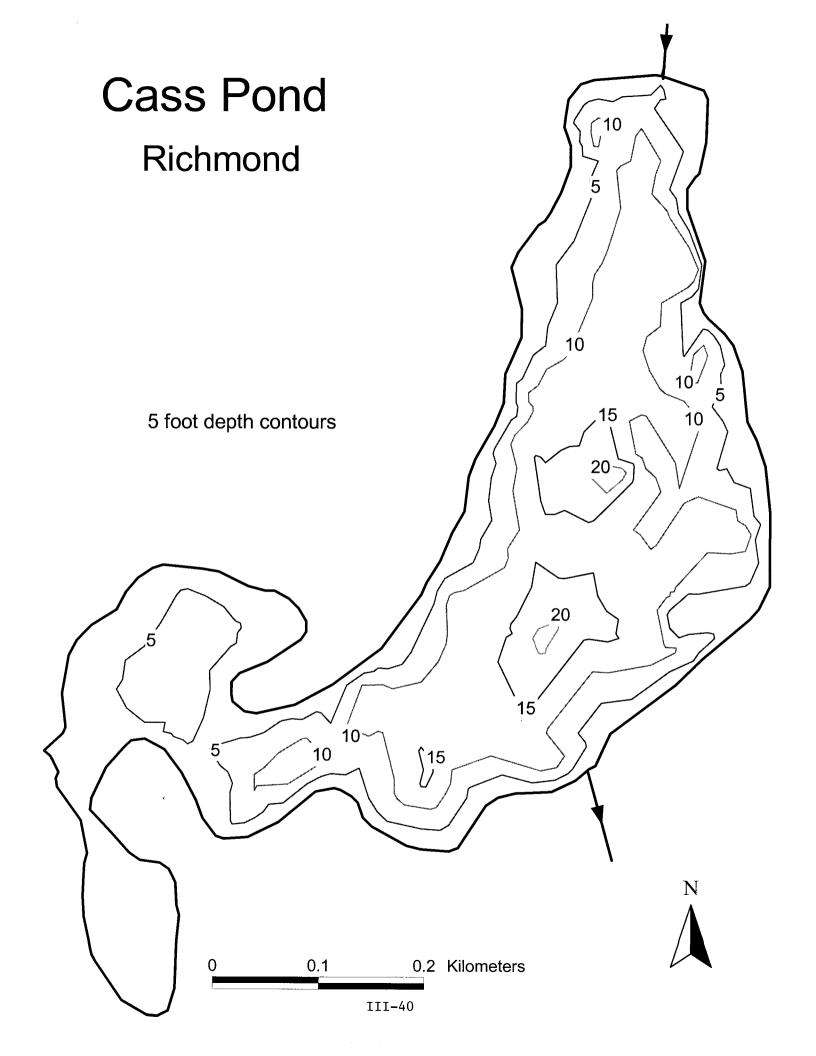
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 2002

D.O.	s.D.	PLANT	CHL	TOTAL	CLASS
**	3	3	2	8	Meso.

### COMMENTS:

- 1. aka Wheeler Pond and Case's Pond.
- 2. 10 mph speed limit for boats on the pond.
- 3. No public access; unimproved launch area for small boats located at the town beach but signed for town residents only.
- 4. Previously surveyed in 1982 and was rated oligotrophic in 1982. Change in trophic class was mainly due to increased algal growth (chlorophyll from 1.4 to 8) and decreased water clarity (transparency from 7 to 3 meters). More frequently collected data is needed to determine if this is a real trend or a yearly variation.
- 5. Not heavily developed: one juvenile camp, one campground and about a dozen cottages.



### FIELD DATA SHEET

LAKE: CASS POND

DATE: 07/30/2002

TOWN: RICHMOND

WEATHER: Hot & breezy

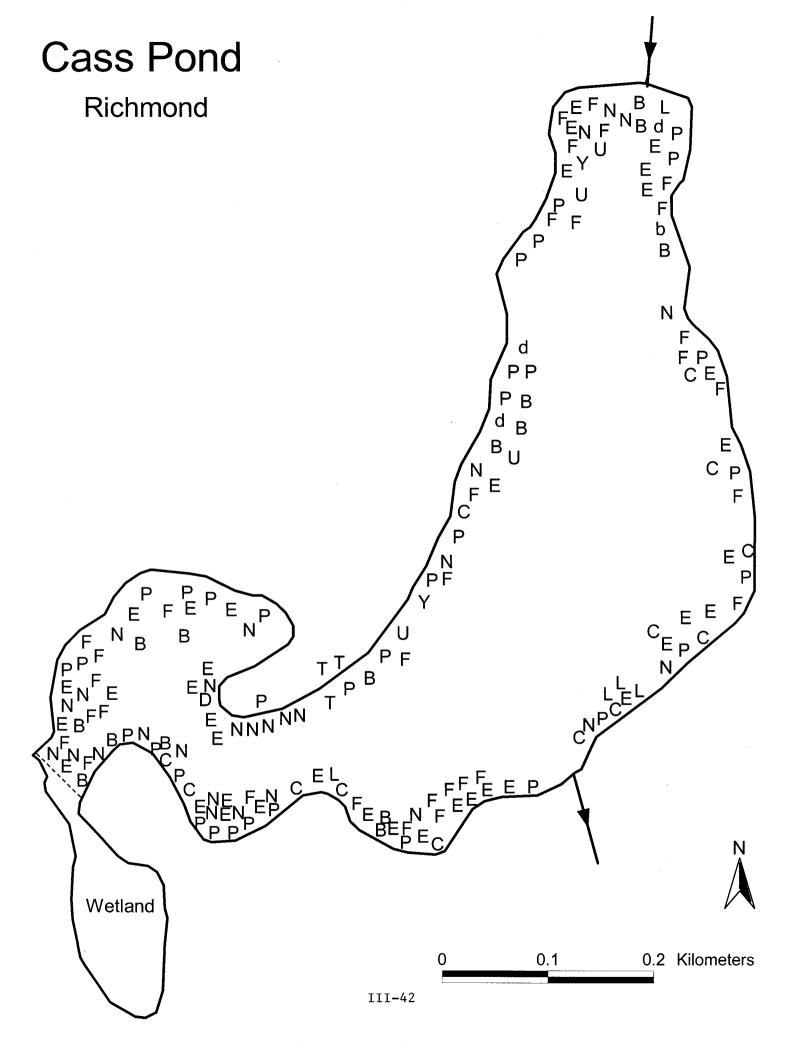
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	25.8	7.5	92 %
1.0	25.4	7.2	88 %
2.0	24.1	7.7	92 %
3.0	23.5	7.5	89 %
4.0	23.2	7.2	84 %
5.0	20.6	0.3	3 %
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SECCHI DISK (m): 2.9 COMMENTS:

BOTTOM DEPTH (m): 5.8

TIME: 1330

\*Dissolved oxygen values are in mg/L



### AQUATIC PLANT SURVEY

LAK	E: CASS POND	rown: Richmond I	DATE: 07/30/2002	
Key	PLANT	NAME	A DUNDANCE	
WeA	GENERIC	COMMON	ABUNDANCE	
F	Nymphoides cordatum	Floating heart	Scattered	
P	Pontederia cordata	Pickerelweed	Common	
E	Eriocaulon septangulare	Pipewort	Scat/Common	
С	Cyperaceae	Non-flowering sedge	Scat/Common	
N	Nymphaea	White water lily	Common	
b	Scirpus	Bulrush	Sparse	
В	Brasenia schreberi	Water shield	Scattered	
L	Lobelia dortmanna	Water lobelia	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
U	Utricularia	Bladderwort	Scattered	
T	Typha	Cattail	Sparse	
D	Decodon verticillatus	Swamp loosestrife	Sparse	
OVERALL ABUNDANCE: Common				

## **GENERAL OBSERVATIONS:**

1. A wetland area was located in the upper reaches of the southwest cove.